Jun 4th, 3:30 PM

OmegA Overview

Thomas Carroll
Northrop Grumman Innovation Systems (NGIS)

THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN

OmegA Overview

The 46th Space Congress

4 June 2019

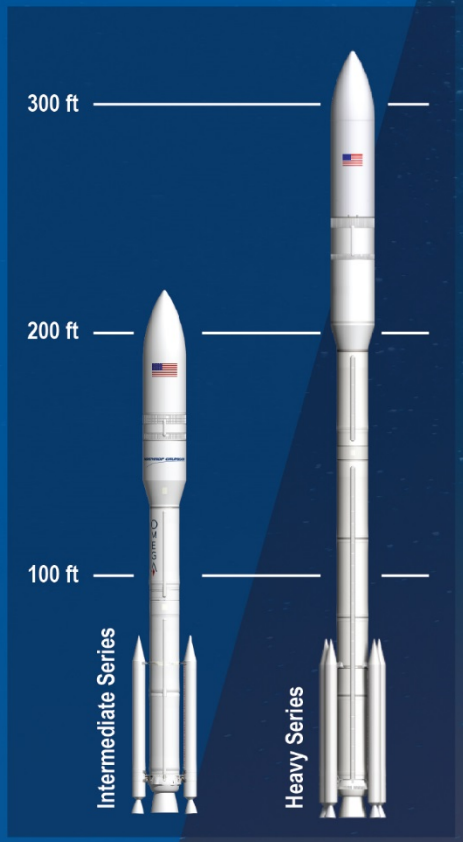
Thomas Carroll

Commercial Launch Services

OMEGA

Overview

Three Stage Intermediate to Heavy Launch System



5M Diameter Composite Payload Fairing

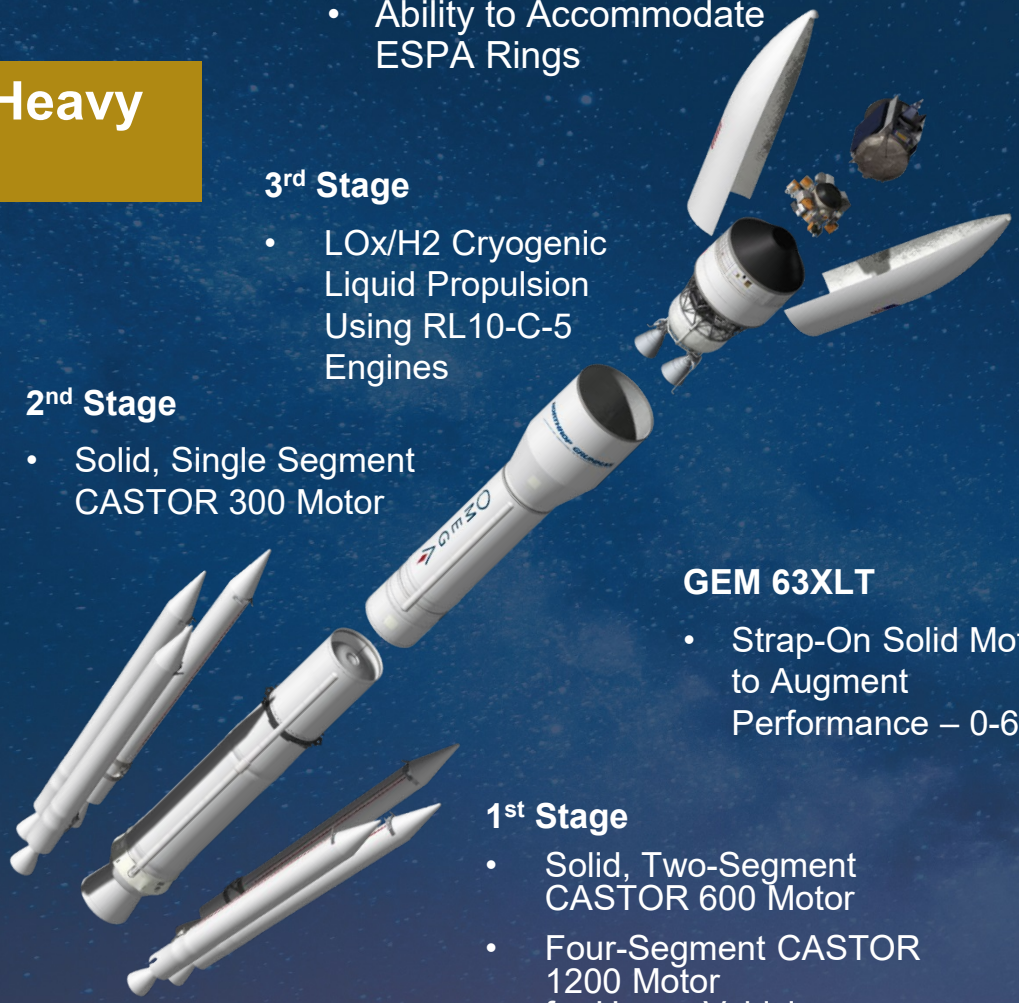
- Ability to Accommodate ESPA Rings

3rd Stage

- LOx/H2 Cryogenic Liquid Propulsion Using RL10-C-5 Engines

2nd Stage

- Solid, Single Segment CASTOR 300 Motor



GEM 63XLT

- Strap-On Solid Motors to Augment Performance – 0-6

1st Stage

- Solid, Two-Segment CASTOR 600 Motor
- Four-Segment CASTOR 1200 Motor for Heavy Vehicle

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Performance

Orbit	Inter Perf (kg)	Heavy Perf (kg)
LEO (100 nmi)	16,000	8,600 - 18,350
MEO (transfer)	8,900	6,200 - 13,180
MEO (direct)	5,400	4,100 – 9,340
SSO / Polar	15,500	8,500 - 18,000
GTO (1800m/s ΔV)	9,200	6,960 -13,185
GEO	3,200	2,500 - 6,710
Tran-Mars	5,000	4,000 - 8,950
Escape (C3=0)	6,400	5,000 – 10,700

Tailorable to Support Various Mission Requirements

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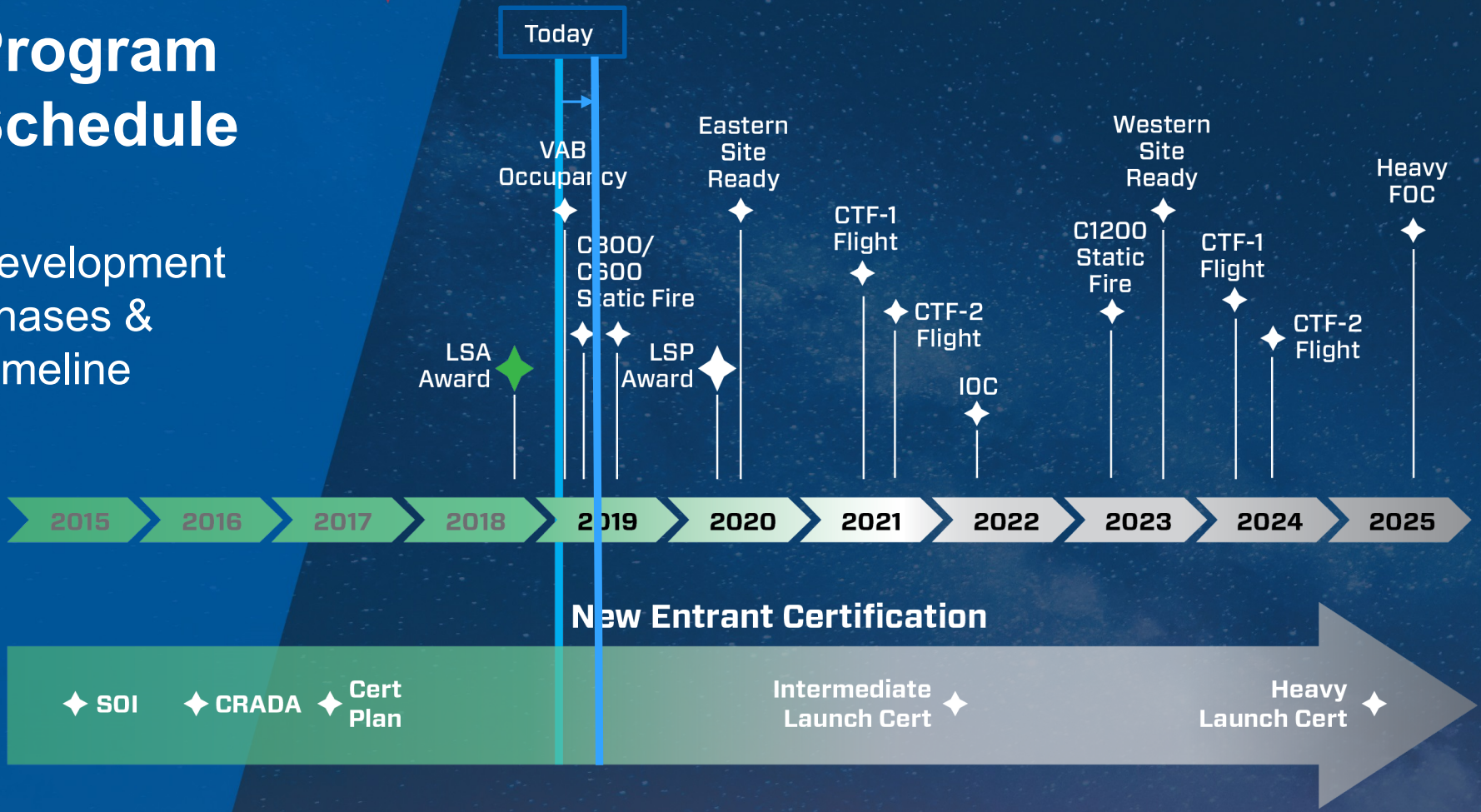
Program Schedule

Development Phases & Timeline



On Schedule for Flight in Mid 2021

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Accomplishments - Booster

▲ C600 Composite Case Successful Hydroburst Test

▲ C300 Motor Segment - 5th completed segment

▲ Casting C600 Static Fire FWD Segment

▲ 2nd Stage Igniter Test

Critical Hardware is Progressing to Plan

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Booster Static Test Preparation

▲ C600 Forward and Aft Segments Being Readied for Test

▲ C600 Static Fire Fwd Segment Transportation to Test Stand

▲ C600 Static Fire Segment Assembly

1st Stage C600 Static Test Fire completed on Schedule: 30 May 2019

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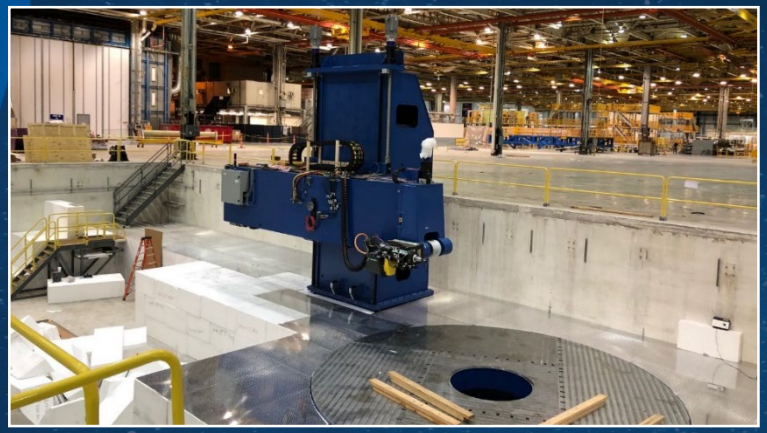
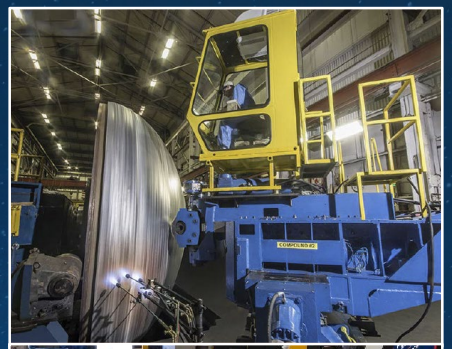
Accomplishments – Upper Stage

▲ Workhorse RL10 Upper Stage Engine is in Production



▲ Dedicated OmegA Friction Stir Weld Station Installed in Michoud Facility

▲ Longitudinal and Circumferential Weld Tooling in Place



▲ Structural Elements in Production

Upper Stage Facilities and Hardware Progressing to Plan

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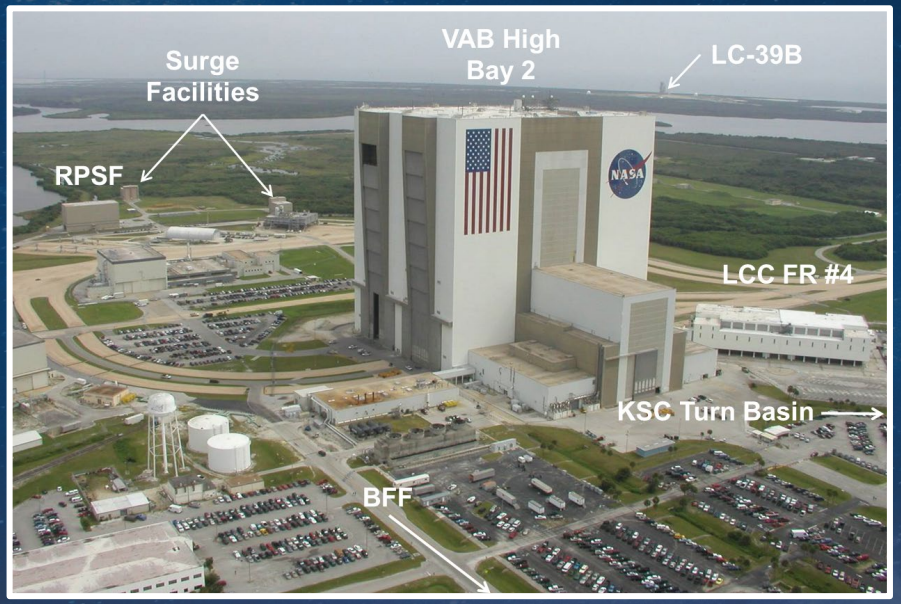
Accomplishments – Launch Sites

▲ Working with USAF on SLC-6 Plan



▲ KSC Facilities and Infrastructure Upgrades in Work

Launch Sites and Other Infrastructure Are Progressing to Plan

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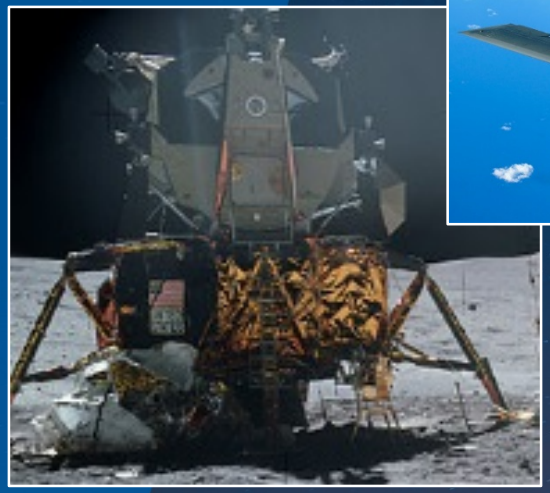
Value-Driven Innovation in Service of America's Missions

Northrop Grumman has Been There from the Beginning of the Space Age

We Understand and Embody the Values and Performance that Defines American Innovation

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